
Editorial

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Biographical notes: Sathish Kumar is working as a Professor at the Department of Electrical and Electronics Engineering, Surya Engineering College, Erode, India. He has published more than 50 articles in referred journals. He acted as a conference chair in IEEE conferences. His area of interests includes intelligent computing and networks.

Zubair Baig is currently a Senior Lecturer in Cyber Security with the School of Information Technology, Deakin University, Geelong, VIC, Australia. He has authored/co-authored over 80 journal and conference papers and book chapters. His research interests are in the areas of cyber-security, the IoT, artificial intelligence, and optimisation algorithms. He is serving as an Editor for the *IET Wireless Sensor Systems Journal* and *PSU – A Review-Journal*. He has served on numerous technical program committees of international conferences and has delivered more than 15 keynote talks on cyber-security.

1 Introduction

Computer aided intelligent system develops the computing technologies in an intelligent manner and it is applied in wide range of applications such as information computing, virtual reality and security environment. The various techniques such as artificial intelligence, soft computing, machine learning, fuzzy logic system, evolutionary algorithms and decision technologies helped to improve the performance of computer aided intelligent systems. This special issue collects the various research and development areas associated with the computer aided intelligent systems. This special issue recommends the 15 high quality papers based on the reviewer recommendation and peer review process.

The first paper entitled ‘Optimised RBIDS: detection and avoidance of black hole attack through NTN communication in mobile ad hoc networks’ helps to improve the network performance by using the proposed RBIDS approach with malicious node detection in mobile ad hoc networks. This proposed algorithm applied on every individual node to calculate the overall performance of the network based on regression values. Second paper entitled ‘A new parallel DSP hardware compatible algorithm for noise reduction and contrast enhancement in video sequence using Zynq-7020’ designed for noise reduction and the experimental results are measured by using qualitative and quantitative analysis for real-time implementation. Next paper entitled ‘HDFS-based parallel and scalable pattern mining using clouds for incremental data’ proposed a new framework called Hadoop-based parallel frequent pattern mining (HPFP) and it optimally utilise the clusters efficiently from large databases. Fourth paper entitled ‘Double-pulse stand-off explosive vapour detection system for flexible perilous materials’ proposed an intelligent unmanned robot (IUR) to take the necessary action automatically and it is specially designed robotic system to save human life and protect the country from enemies.

Next paper entitled ‘An efficient packet image transmission based on texture content for border side security using sensor networks’ used the image texture feature and spectral information for priority measures to analyse the weight importance of macro-blocks from their textural GLCM properties. Another paper entitled ‘Hybrid data model of PACE and quadruple: an efficient data model for cloud computing’ introduces a data model which uses hybrid approach of provenance aware context entity (PACE) and it enhances accessibility, maintainability, and also accelerates query execution time. ‘Enhancing performance of WSN by utilising secure QoS-based explicit routing’ proposed identity-based digital signature (IBDS) and enhanced identity-based digital signature (EIBDS) for high computational overhead and resilience in WSN and explained in seventh paper. Semi-automatic working model designed for move around and pluck the tea leaves and explained in eighth paper entitled ‘A semi-automated system for smart harvesting of tea leaves’. Next paper entitled ‘Hybrid wind-solar system – an optimised approach for efficient power generation’ introduced a new solution for improved voltage stability with quality power output and photovoltaic panel are used for high efficient approaches. Tenth paper entitled ‘PV control systems using iterated local search MPPT with an improved switched capacitor DC-DC converter’ introduced a smart control technique for continuous tracking in maximum power point (MPPT) of a PV system with constraints of varying temperature and irradiance along with ILS.

Next paper entitled ‘Artificial intelligent technology for safe driver assistance system’ helps the driver to avoid accident and control the vehicle speed by using artificial intelligence techniques. Twelfth paper entitled ‘Proposed variants of charged system search algorithm for location area optimisation in mobile wireless communication networks’ and it overwhelms the local and global minima and the new variants are introduced into the CSSA for the gravitational search algorithm (GSA) models. Next paper entitled ‘Hidden object detection for classification of threat’ proposed a new threat classification technique to detect the hidden objects in images. Next paper entitled ‘Deep learning-based techniques to enhance the precision of phrase-based statistical machine translation system for Indian languages’ proposed the Box’s evolutionary optimisation and teacher-learner-based-optimisation (BEO-TLBO) for proportional-integral-derivative (PID) controller tuning of level control of three-tank system and it provides high accuracy in machine translation system. And the last paper entitled ‘PID controller tuning

using hybrid optimisation technique based on Box's evolutionary optimisation and teacher-learner-based optimisation' proposed a new technique for PID controller tuning of level control of three-tank system and it provides the high accuracy based on the desired specification of hybrid optimisation techniques.